

#### DISCUSSION

This acoustic-backscatter map of the Offshore of Point Conception map area in southern California was generated from acoustic-backscatter data collected by Fugro Pelagos (fig. 1) in 2008, using a combination of 400-kHz Reson 7125, 240-kHz Reson 8101, and 100-kHz Reson 8111 multibeam echosounders. These acoustic-backscatter data cover the area from about the 10-m isobath to beyond the 3-nautical-mile limit of California's State Waters.

During the Fugro Pelagos mapping missions, an Applanix POS-MV (Position and Orientation System for Marine Vessels) was used to accurately position the vessels during data collection, and it also accounted for vessel motion such as heave, pitch, and roll with navigational input from GPS receivers. Smoothed Best Estimated Trajectory (SBET) files were postprocessed from logged POS-MV files. Sound-velocity profiles were collected with an Applied Microsystems (AM) SVPlus sound velocimeter. Soundings were corrected for vessel motion using the Applanix POS-MV data, for variations in water-column sound velocity using the AM SVPlus data, and for variations in water height (tides) and heave using the postprocessed SBET data (California State University, Monterey Bay, Seafloor Mapping Lab, 2016). The Reson backscatter data were postprocessed using Geosounder software. The backscatter intensities were radiometrically corrected (including despeckling and angle-varying gain adjustments), and the position of each acoustic sample was geometrically corrected for slant range on a line-by-line basis. After the lines were corrected, they were mosaicked into 0.5-m-resolution images (California State University, Monterey Bay, Seafloor Mapping Lab, 2016). The mosaics were then exported as georeferenced TIFF images, imported into a geographic information system (GIS), and converted to GRIDs at 2-m resolution.

The acoustic-backscatter imagery from each different mapping system and processing method were merged into their own individual grids. These individual grids, which cover different areas, were displayed in a GIS to create this composite acoustic-backscatter map. On the map, brighter tones indicate higher backscatter intensity, and darker tones indicate lower backscatter intensity. The intensity represents a complex interaction between the acoustic pulse and the seafloor, as well as characteristics within the shallow subsurface, providing a general indication of seafloor texture and composition. Backscatter intensity depends on the acoustic source level; the frequency used to image the seafloor; the grazing angle; the composition and character of the seafloor, including grain size, water content, bulk density, and seafloor roughness; and some biological cover. Harder and rougher bottom types such as rocky outcrops or coarse sediment typically return stronger intensities (high backscatter, lighter tones), whereas softer bottom types such as fine sediment return weaker intensities (low backscatter, darker tones). Ripple patterns and straight lines in some parts of the map area are data-collection and -processing artifacts.

The onshore-area image was generated by applying an illumination having an azimuth of 300° and from 45° above the horizon to 2-m-resolution topographic-lidar data from National Oceanic and Atmospheric Administration Office for Coastal Management's Digital Coast (available at <http://www.nce.noaa.gov/digitalcoast/data/coastlidar>) and to 10-m-resolution topographic-lidar data from the U.S. Geological Survey's National Elevation Dataset (available at <http://ned.usgs.gov/>).

#### REFERENCE CITED

California State University, Monterey Bay, Seafloor Mapping Lab, 2016, Southern California 2008 CSMP surveys: California State University, Monterey Bay, Seafloor Mapping Lab Data Library, accessed October 2016 at [http://seaflooroutlabs.org/SFMLwebDATA\\_SURVEYMAP.htm](http://seaflooroutlabs.org/SFMLwebDATA_SURVEYMAP.htm).

#### EXPLANATION

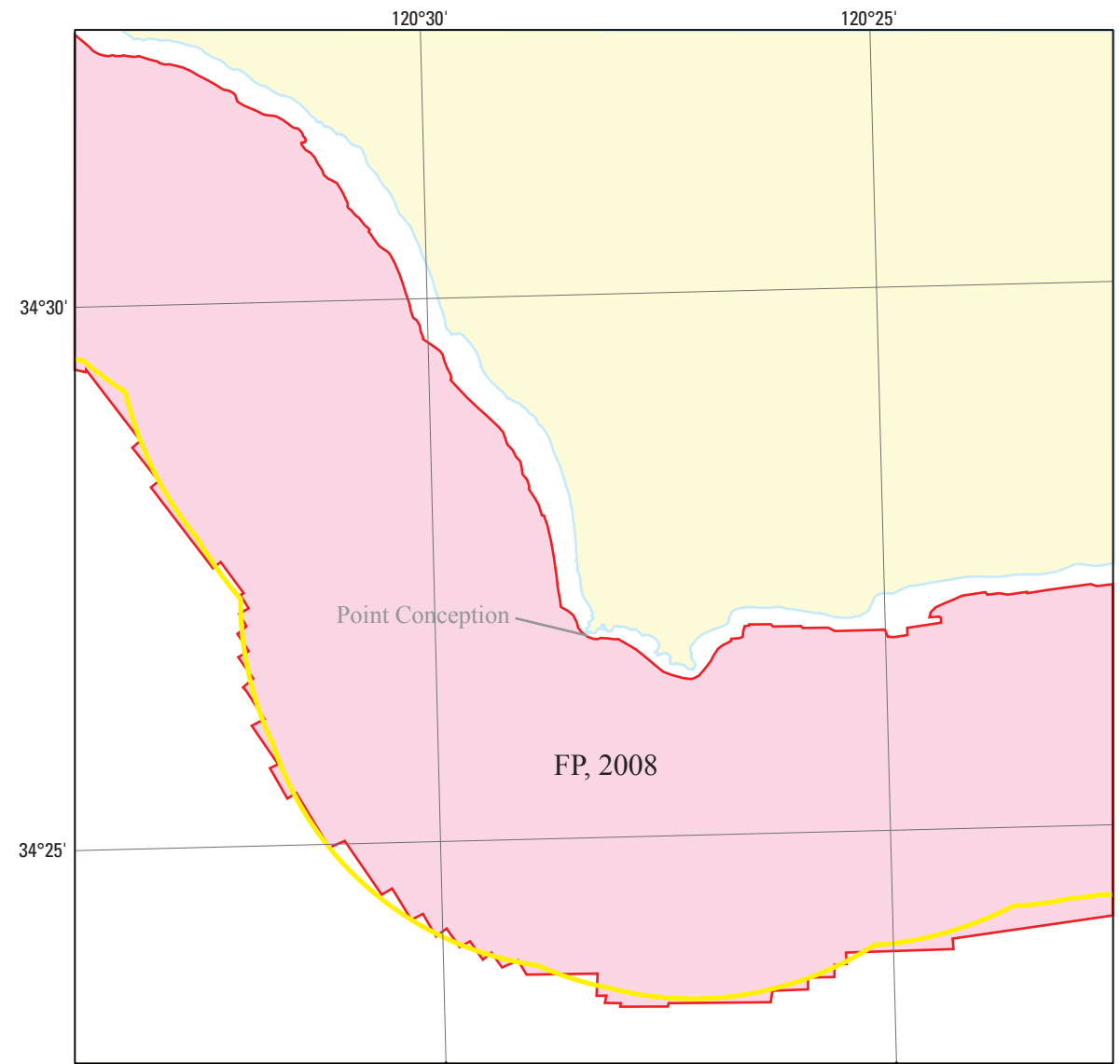
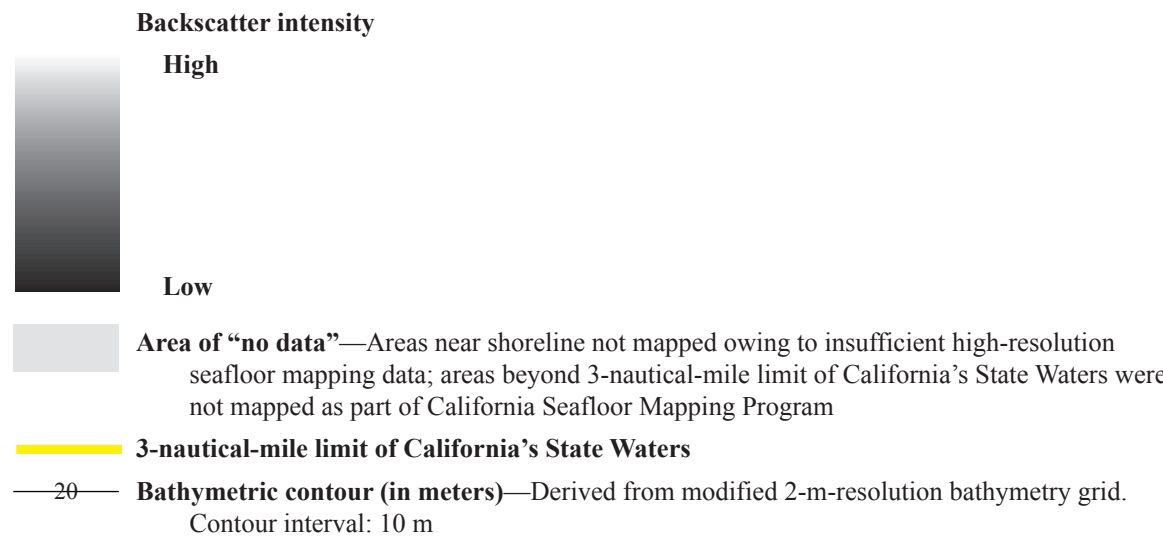


Figure 1. Map showing areas of multibeam echosounder surveys (pink shading) and publicly available onshore topographic-lidar data (yellow shading). Also shown is data-collecting agency (FP, Fugro Pelagos) and dates of surveys if known.